

Date: Monday, 5/1/2006 3:47:31 PM
User: Kim Johnston

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services Drawing Name : SKID TUBE ASSEMBLY
Job Number : 26870A
Estimate Number : 10023
P.O. Number : N/A Part Number : D205634041
This Issue : 5/1/2006 S.O. No. : N/A Drawing Number : D2580 REV C
Prsht Rev. : NC Project Number : N/A
First Issue : N/A Type : LANDING GEAR Drawing Revision : C
Previous Run : 26869A Material : N/A
Written By : SEE COMMENT BELOW Due Date : 5/20/2006 Qty: 1 Um: Each
Checked & Approved By : 06.05.02
Comment : Est Rev: N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30 KJ
Est Rev. O 06.02.28 Added paperwork EC

Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 D25001190 Ex'n -I' Beam Tube 4"



Comment: Qty.: 1.0400 Each(s)/Unit Total : 1.0400 Each(s)

Pick:

Qty Part Number Description Batch

1 D2500-1-190 Skid Tube Extrusion

B24669 DP 06-5-3

2.0 DC DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Photocopy D205-634 bluefile & type labels per PPP D205-634 CHG001

See B 26870

3.0 D2596 205 Web



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 D2596 205 Web

B26750 RT 06-05-04

4.0 LANDING GEAR 1 LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1- Inspect mat'l D2500-1-190 for damage

2-Cut D2500-1-190 per Dwg D2580 if necessary Deburr ends

3-Drill pilot holes using drill jig DT 8149

4-Acid etch and Alodine tube per QSI 005 4.1

DP 06-5-3
Pm 06-05-10 30

W/O:		WORK ORDER CHANGES							
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QA: N/C Closed: _____ Date: _____

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Job Number: 26870A

Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description :

5-Open holes to 0.500" as per Dwg D2580 without cutting fluid

fm' 06-05-04 ①

6-Countersink holes as per Dwg D2580 without cutting fluid

fm' 06-05-04 ①

7-Deburr and blow out all chips from inside of tube

fm' 06-05-04 ①

8-Bond web in place per QSI 015. Allow 12 Hrs. cure time before cutting

Pick:

Qty Part Number Description Batch

A/R Sikaflex-291 *M120480*

Sikaflex expire date: *06-11-01 25 06 0504*

Start Time: *130 06 05 04*

Fin Time: *06-5-8*

5.0

BENDING

BENDING MACHINE



Comment: BENDING MACHINE

Bend as per program D2580.C on CNC Bender and Folio FT009

AP 06-5-8

6.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Cut tubes as per Dwg. D2580

DP 06-5-8

2-Deburr ends after cutting. Remove alodine from around holes

BE 06-05-08 ①

7.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

8.0

D25763

Step (Machining Detail)



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 D2576-3

Step

B22141 BE 06-05-10 ①

W/O:		WORK ORDER CHANGES							
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Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description :

9.0

D2579

Crossbolt Spacer



Comment: Qty.: 20.0000 Each(s)/Unit Total: 20.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
20	D2579	Spacers	R25977 BE 06-05-10 (1)

10.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Prepare tube for welding D2576-3 Step Remove alodine as required.

BE 06-05-10 (1)

2-Weld step D2576 as per Dwg. D2580 and QSI 004

A/R

Aluminum Rod

M/9/01

BE 06-05-10 (1)

3-Weld crossbolt spacers D2579 as per Dwg. D2580 and QSI 004. For D2579 side, pass 3/8" drill, weld other side, pass 3/8" drill

spacers, weld one

A/R

Aluminum Rod

M/9/01

BE 06-05-10 (1)

4-Grind welds as per Dwg D2580 Grind flush ridge made from bending

25 06-05-15

5-Drill holes for wearplates using DT 8217 Open holes to 19/64", adjust stopper not to hit web. Deburr

pm 06-05-16 (1)

6-Counterbore crossbolt spacers to 7/16" ID x 1.0" deep as per Dwg D2580. Deburr holes

pm 06-05-16 (1)

7-Drill pilot holes for aft cap using DT 8215 Open holes to #6 Drill bit. Deburr

pm 06-05-16 (1)

8-Drill pilot holes for Tow ring using DT8091, open to .640" and Deburr

pm 06-05-16 (1)

11.0

QC5/9

WELD INSPECTION



Comment: WELD INSPECTION

Inspect weld and Counterbore work to Step 20

06-05-18 PD 06-05-18

12.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Powder Coat White (Ref: 4.3.5.2) as per QSI 005 4.3

a.m

06-07-13 (1)

W/O:		WORK ORDER CHANGES						
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Job Number: 26870A

Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description :

13.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

FC 06 07 13

14.0

D25771

Wearplate Fwd



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
1	D2577-1	Wearplate	B26350

FC

15.0

D25773

Wearplate Aft



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
1	D2577-3	Wearplate	B25171

FC

16.0

D25775

Wearplate, Centre



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
1	D2577-5	Wearplate	B24199

FC

17.0

ALS71032130

Insert



Comment: Qty.: 44.0000 Each(s)/Unit Total : 44.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
44	ALS7-1032-130	Inserts	193913

FC

18.0

AN960JD10L

Washer



Comment: Qty.: 44.0000 Each(s)/Unit Total : 44.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
44	AN960JD10L	Washer	101291

FC

FC 06 07 13

5

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE		By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

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Job Number: 26870A

Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description :

19.0

AN34A

Bolt



Comment: Qty.: 44.0000 Each(s)/Unit Total : 44.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
44	AN3-4A	Bolt	m18310

FC 06 07 13

20.0

D25941

Plug



Comment: Qty.: 16.0000 Each(s)/Unit Total : 16.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
16	D2594-1	O-RING plug	24104 B25593

FC

21.0

D25943

O-Ring



Comment: Qty.: 16.0000 Each(s)/Unit Total : 16.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
16	D2594-3	Plug O-RING	B24104

FC

22.0

D2855

Cap



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Cap

Batch: 23925A

FC

23.0

AN35A

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Bolt

Batch: 15205

FC

24.0

AN960JD10L

Washer



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Washer

Batch: 101291

FC 06 07 13

(V)

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE		By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes ☒ No ☐ DQA: ☒ ☐ Date: 06/07/24

QA: N/C Closed: _____ Date: _____

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Drawing Name: SKID TUBE ASSEMBLY

Job Number: 26870A

Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description :

25.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

1-Install inserts & wearplates as per Dwg. D2580. Use a drop of Sikaflex on insert holes before installing wearplates

A/R Sikaflex-291

101193

Sikaflex expire date: 11 06

FC

2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2580

FC

3-Inspect for foreign object per QSI 024

FC

4-Install 2855 Aft Cap as per Dwg D2580 and seal Fwd Step & Aft Cap with Sikaflex. Clean excess adhesive

A/R Sikaflex-291

101193

Sikaflex expire date: 11 06

FC
06 07 13

5-Wing Walk as per Dwg D2580 and QSI 005 4.4

1101266

FC 06 07 14 ① Batch:

26.0

QC5

INSPECT WORK TO CURRENT STEP



DL 06/07/14

①

Comment: Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024

27.0

DC

DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Inspection Level 21

06.07.20

Job Completion



W 06/07/14

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE		By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date				

NOTE: Date & initial all entries



DESIGN <i>[Signature]</i>	DRAWN BY <i>[Signature]</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D2580	REV. C SHEET 1 OF 2
DATE 98.08.26		TITLE 205 SKIDTUBE ASSEMBLY	SCALE NTS
A	96.09.16	NEW ISSUE	
B	96.12.02	AS MANUFACTURED	
C	98.08.26	REDRAWN, INCLUDED DEO 9094/9097	

RELEASED
98/09/17 DS

QTY	Part Number	Description
X	D2580-041	SKIDTUBE ASSEMBLY
*	D2500-1	EXTRUSION
1	D2596	205 WEB
1	D2575	AFT CAP
1	D2576 - 3	STEP
20	D2579	CROSS BOLT SPACER
16	D2594-1	PLUG
16	D2594-3	O-RING
1	D2577-1	WEARSHOE
1	D2577-3	WEARSHOE
1	D2577-5	WEARSHOE
44	ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or ALS4-1032-130	INSERT
46	AN3-4A	BOLT
46	AN960JD10L	WASHER

00 08.28
UP 00.03.28

EFFECTIVE DEOS
98/12/14
DEO 9124
DEO 9183

GENERAL NOTES:

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) LENGTH OF D2500-1 EXTRUSION BEFORE BENDING = 190 INCHES *
- 3) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 4) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 5) USE DART DRILL TEMPLATE TD2577-205 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTION D-D (44 PLACES) AFTER FINISH. INSTALL AN3-4A BOLTS AND AN960JD10L WASHERS WITH SIKAFLEX-241.
- 6) WELDING TO BE DONE PER DART QSI 004.
- 7) FINISH:
ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB
POWDER COAT ASSEMBLY GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4
- 8) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES).

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 26870A

Diagram illustrating the grinding locations on the underside of the propeller:

- GRIND FLUSH (4 PLACES)
- GRIND FLUSH
- GRIND FLUSH
- LOCATION RIDGE ON UNDERSIDE OF D2576
- $\frac{1}{16}$

Diagram of the rear of the unit showing the mounting bracket and fasteners. The diagram includes the following labels and dimensions:

- DRILL PRIOR TO D2575 CAP INSTALLATION (2 PLACES)
- #0.208
- SEAL WITH SIKAFLEX-241
- AN3-4A BOLT (1)
- AN95QJ10L WASHER (1)
- (2 PLACES)
- D2575 CAP

D2579 SPACER

D2596 WEB (REF)

ALS7-1032-130 (REF)
(TYP 44 PLACES)

AFTER PERFORM

1. CHA
2. INSU
3. WEL
4. C'BO

AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR #0.508 HOLES ONLY:

1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (20 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C-BORE D2579 SPACER TO #0.437 X 1.00 DEEP

Diagram showing the elevation view of the bridge deck. Key dimensions and features include:

- Overall deck width: 37.50
- Distance to aft end of D2596 web: 3.75 (indicated by triangles labeled 3 and 7)
- Reinforcement spacing: 8.188 (7 equal spaces, 57.313 REF)
- Reinforcement diameter: #0.508 (TYP.) (40 PLACES)
- Reference to Detail A for reinforcement details.
- Other dimensions: 1.750, 8.750, 17.375, 26.000, 34.188, 91.500, 190.0 (D2500-1), 38.0.

Figure 10 is a plan view diagram of a horizontal curve. It shows two circular arcs connected by a straight line. The left arc has a radius of 13.4 and a central angle of 4 degrees. The right arc has a radius of 32.0 and a central angle of 4 degrees. The distance between the hole and the tangent point for each arc is 1.0. The total length of the curve is 20.0. The offset from the centerline to the hole is 0.640. The distance between the two holes is 1.4.

FUSelage ASSEMBLY DETAIL

WELD AS PER DETAIL B

BLACK ANTI-SKID TOP OF STEP TO 0.5 ABOVE BOTTOM EDGE

0.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5

BLACK ANTI-SKID TO 0.5 ABOVE LOCATION RIDGE

REFER TO DETAIL C

D2577-3 D2577-5 D2577-1

8

AN3-4A BOLT (1)
AN960JD10L WASHER (1)
(44 PLACES)

DESIGN DPA	DRAWN BY CB	PART
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RELEASE
98/09/17 DS

DESIGN <i>DH</i>	DRAWN BY <i>CP</i>	DART	DART AEROSPACE LTD HARRISBURY, ONTARIO, CANADA
CHECKED <i>DH</i>	APPROVED <i>AS</i>		
DATE 98.08.26	DRAWING NO. D2580		REV. C SHEET 2 OF 2
	TITLE 205 SKIDTUBE ASSEMBLY		SCALE 1:24